

Rain Garden Installation and Design



Rain Garden Installation and Design

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Objectives

- ❖ Define stormwater pollution and become familiar with ways to prevent or minimize it.
- ❖ Learn how to design and build rain gardens.
- ❖ Create a public rain garden at the library!

Introduction

❖ What is stormwater pollution?

Stormwater pollution can be defined as anything that is not entirely rain water that enters storm drains and natural waterways.

point source pollution: discrete, regulated dischargers such as factories, sewage plants, commercial farms and feedlots

non-point source pollution: runoff conveyed by stormwater in neighborhoods, city streets, rooftops and driveways

Introduction

- ❖ What is stormwater pollution?

Fertilizers



Introduction

- ❖ What is stormwater pollution?

Pet Waste



Introduction

❖ What is stormwater pollution?

Detergents &
Petroleum



Introduction

- ❖ What is stormwater pollution?

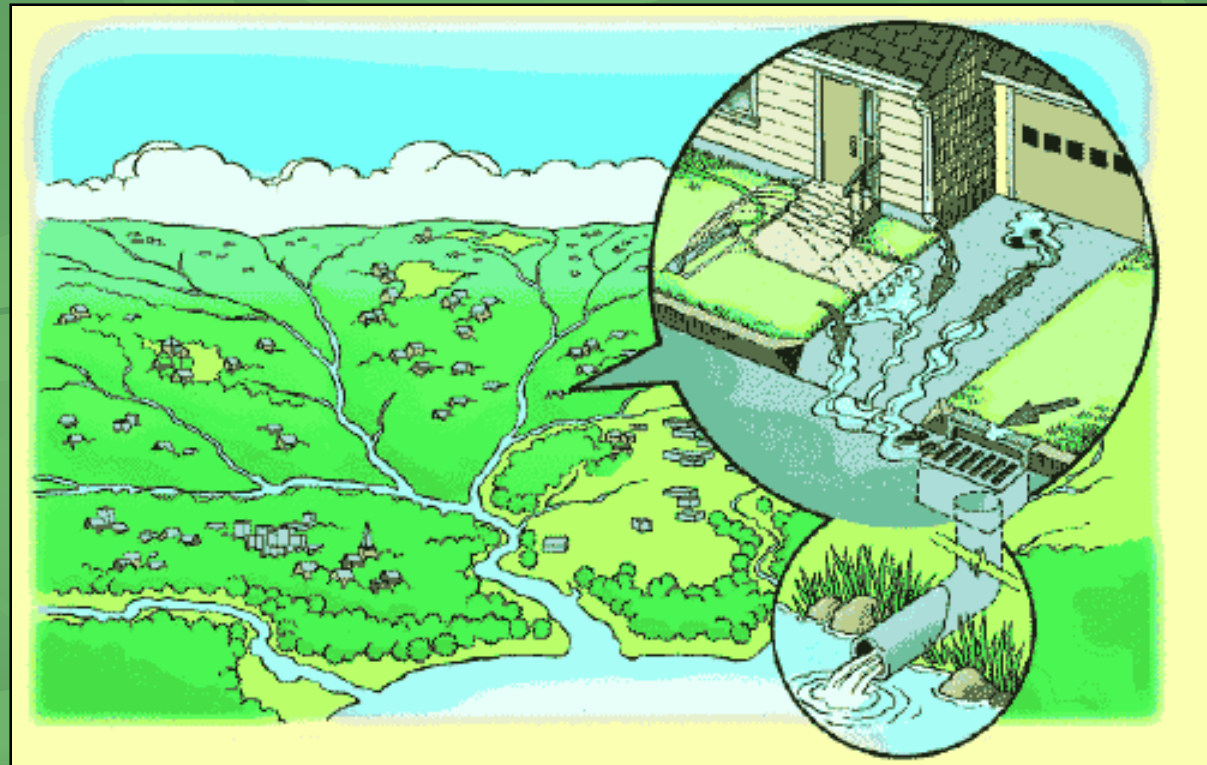
Pesticides &
Household Chemicals



Introduction

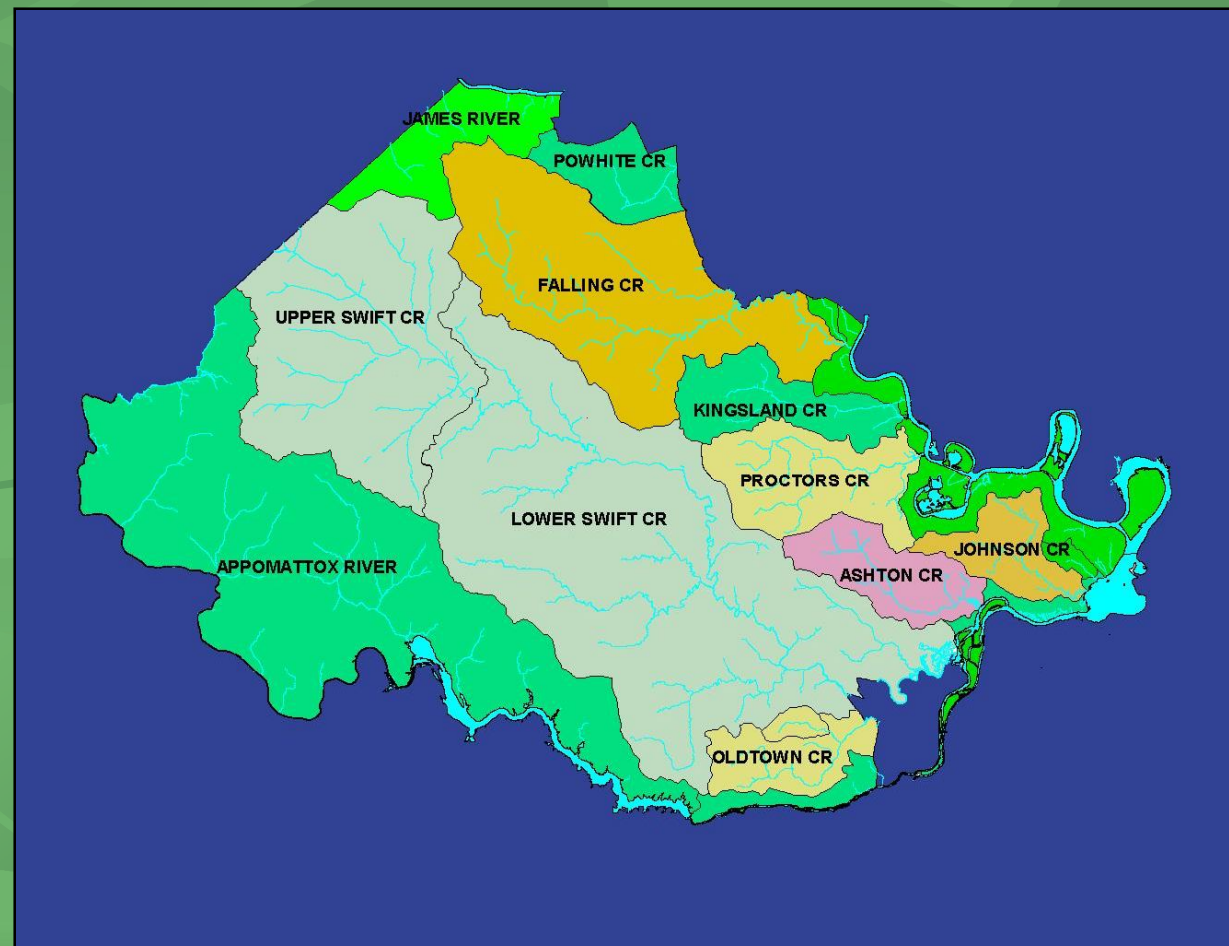
❖ What is a watershed?

A watershed is an area of land that drains to a common body of water.



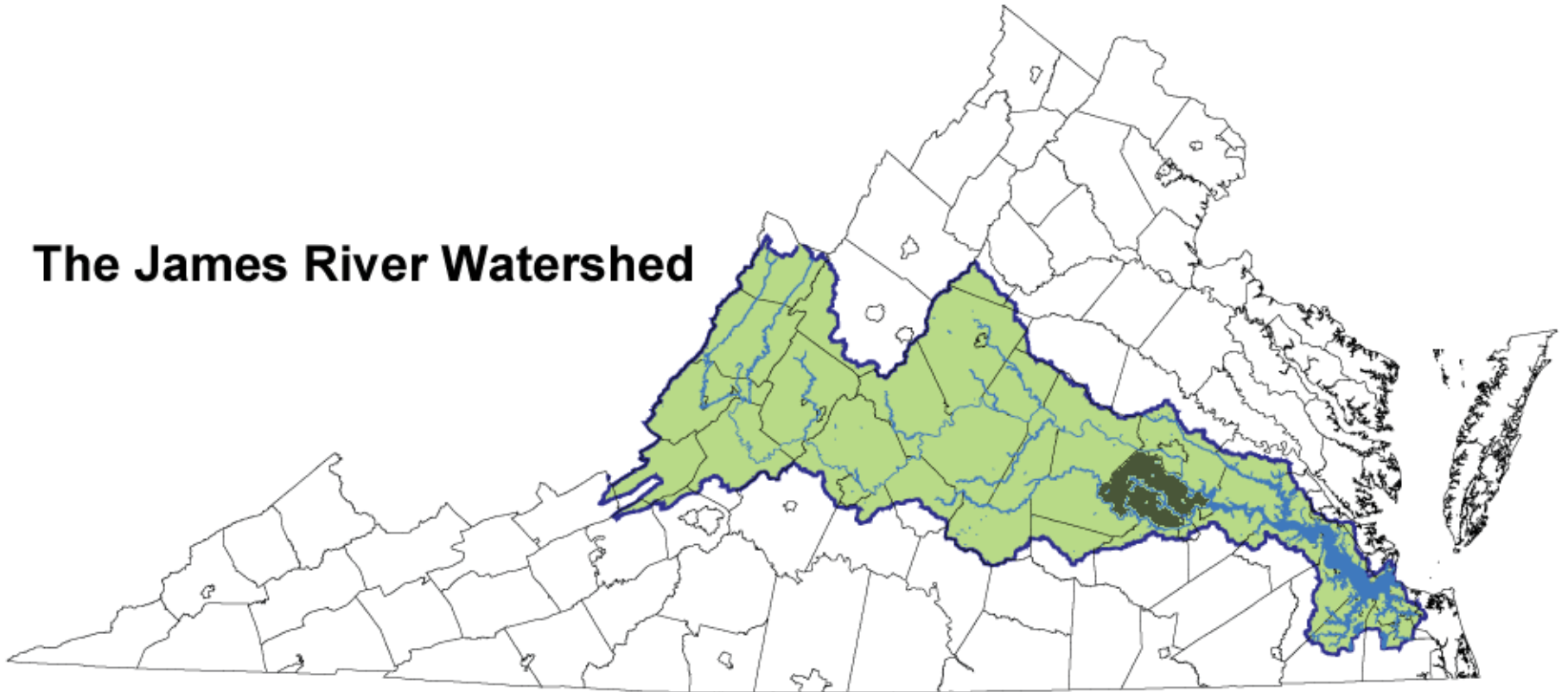
Introduction

❖ Chesterfield County Watersheds



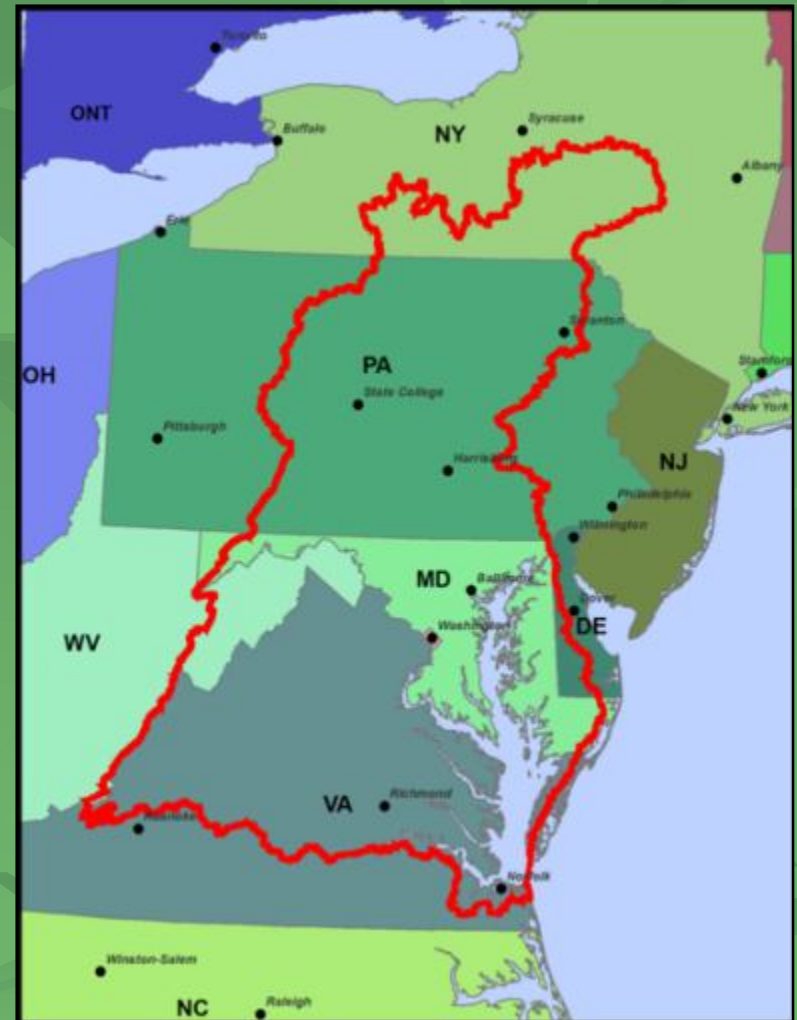
Introduction

The James River Watershed



Introduction

- ❖ Chesapeake Bay Watershed
 - 64,000 square miles
 - Covers parts of six states



Introduction

- ❖ Chesapeake Bay Watershed
Home to 17 million people...



Pollution Reduction at Home

❖ Rain Barrels



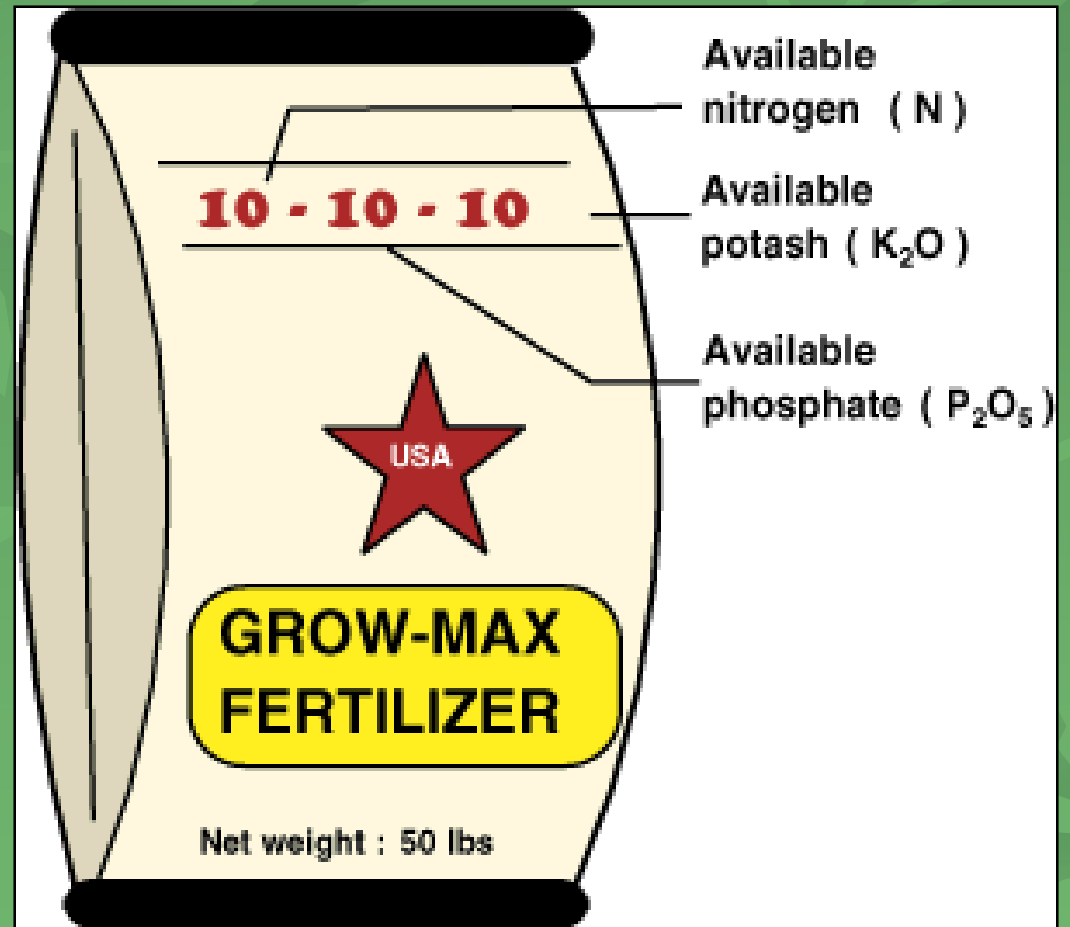
Pollution Reduction at Home

- ❖ Rain Barrels
- ❖ Scoop the poop



Pollution Reduction at Home

- ❖ Rain Barrels
- ❖ Scoop the poop
- ❖ Fertilize in Fall



Pollution Reduction at Home

- ❖ Rain Barrels
- ❖ Scoop the poop
- ❖ Fertilize in Fall
- ❖ Wash cars on grass



Pollution Reduction at Home

❖ And Rain Gardens!



Finding a Location

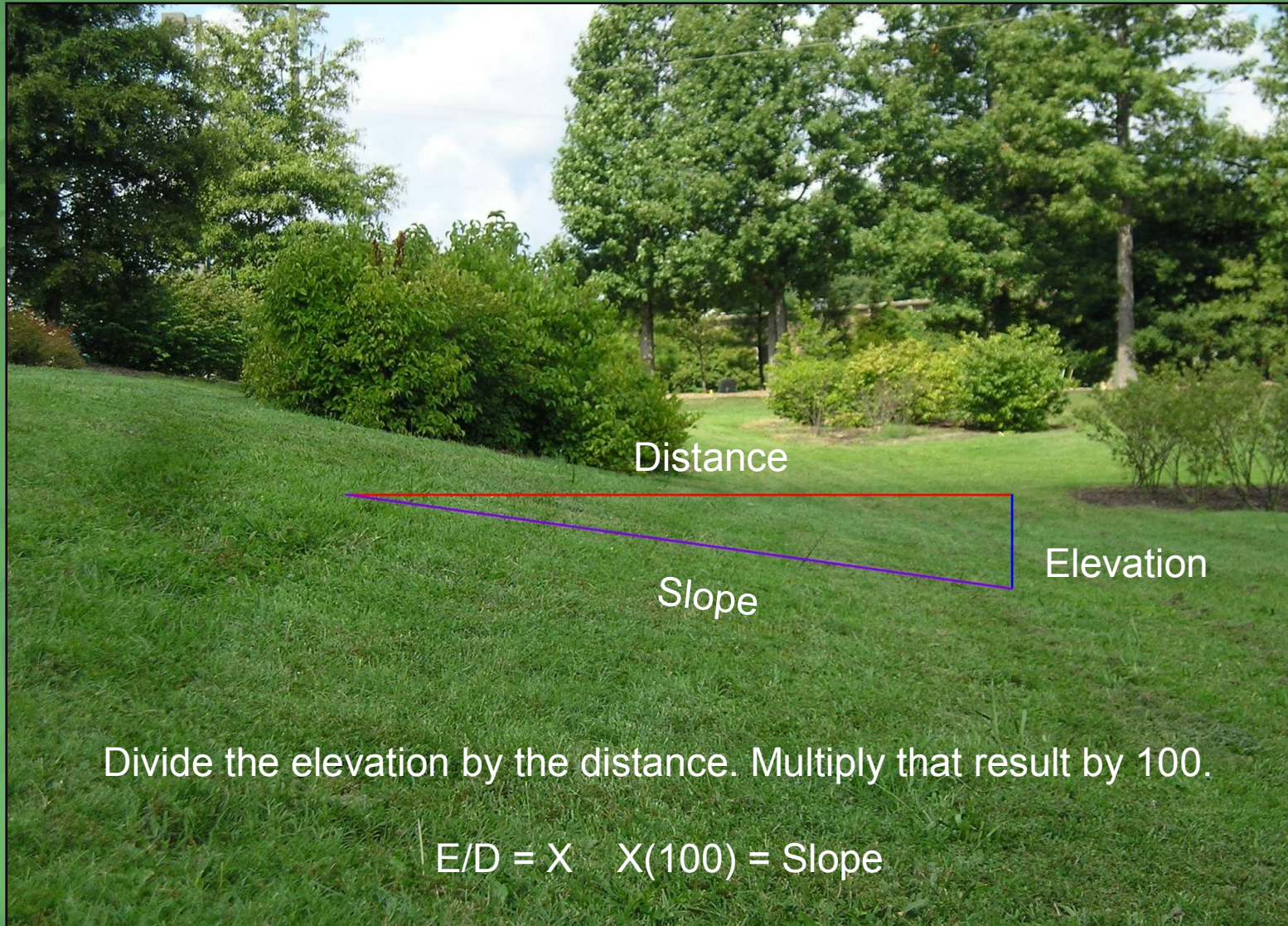
- ❖ Minimum of 10 feet from house
- ❖ Down-slope of impervious surfaces
- ❖ Full or partial sun
- ❖ Aesthetics



Finding a Location

- ❖ Rain gardens should not be located on ground with more than a 15% slope.

Finding a Location



Finding a Location

- ❖ Rain Gardens must be located in a place where water will infiltrate.
- ❖ Water in a 6" hole should infiltrate in six hours.
- ❖ The rain garden should not interfere with the water table.
- ❖ Test by digging 2 inches below the estimated bottom of the garden. If it fills with water the garden may need to be relocated.
- ❖ Call Miss Utility! 811 or 1-800-552-7001

Designing your Rain Garden

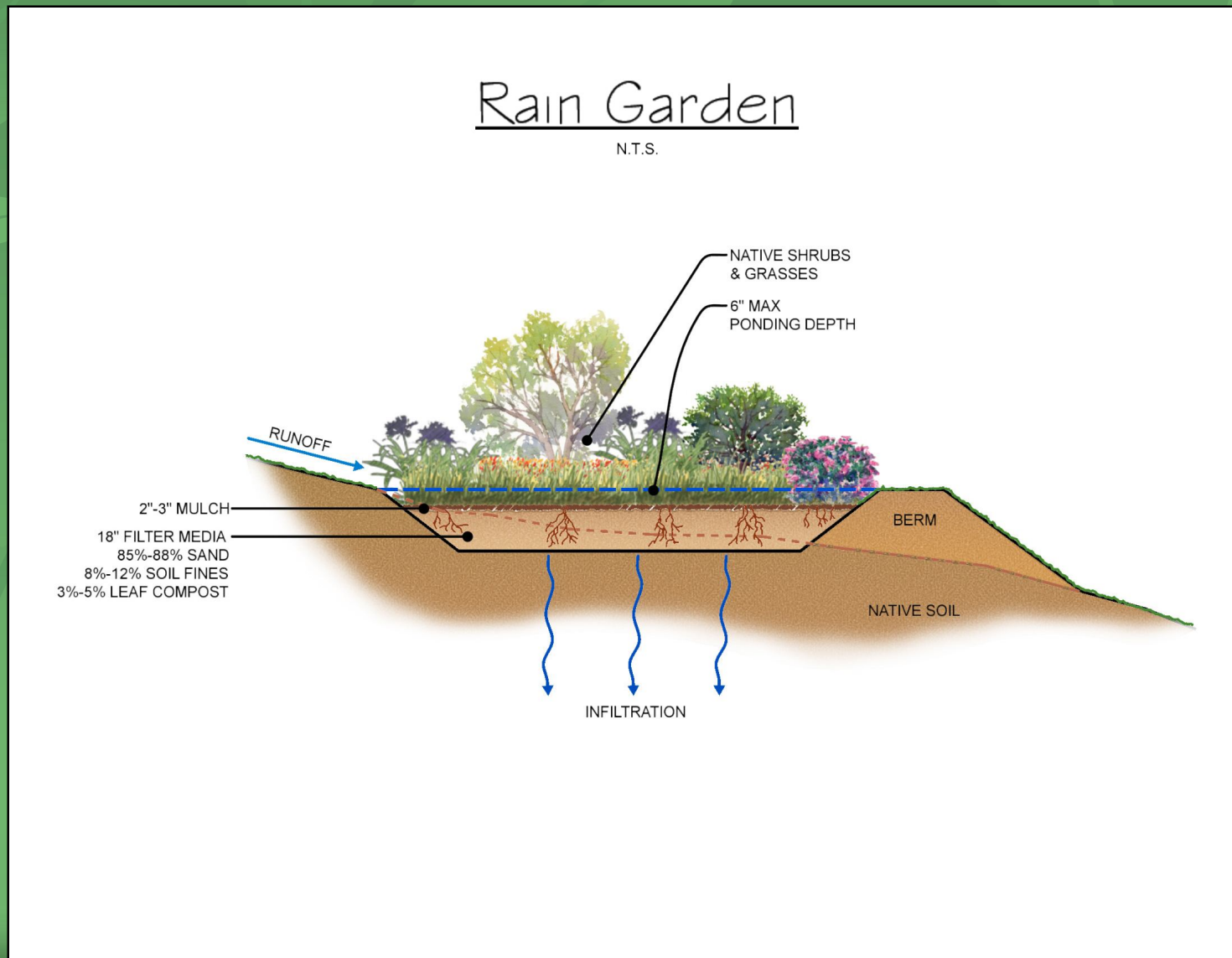
- ❖ Rain gardens down-slope of impervious surfaces should be 1/3 the size of the drainage area they collect.

length X width = drainage area
drainage area X 0.33 = garden size

Designing your Rain Garden

- ❖ Rain gardens should be at least 18 inches deep.
- ❖ Allow room for the berm
 - no more than 6 inches higher than top of garden
 - minimum 12 inches wide

Designing your Rain Garden



Designing your Rain Garden

- ❖ Choose plants that are native to Virginia.

Common Name	Scientific Name
Herbaceous/Perennials	
Joe Pye Weed	Eupatorium purpureum
Switch Grass	Panicum virgatum
Great Blue Lobelia	Lobelia siphilitica
Bee Balm	Mornarda didyma
Blackeyed Susan	Rubekia herta
New York Ironweed	Vernonia noveboracensis
New York Aster	Symphyotrichum novi-belgii
Shrubs	
Winterberry Holly	Ilex verticillata
Sweet Pepperbush	Clethra ainifolia
Sweetbay Magnolia	Magnolia virginiana

Building Your Rain Garden

- ❖ Mark the area with spray paint.
- ❖ Excavate to a minimum of 18 inches.
- ❖ Using the excavated soil, construct the berm.

Building Your Rain Garden



Building Your Rain Garden

- ❖ Areas with dense subsoil may need extra drainage.
- ❖ If necessary, a drain tile can be added to facilitate drainage.

Building Your Rain Garden



Building Your Rain Garden

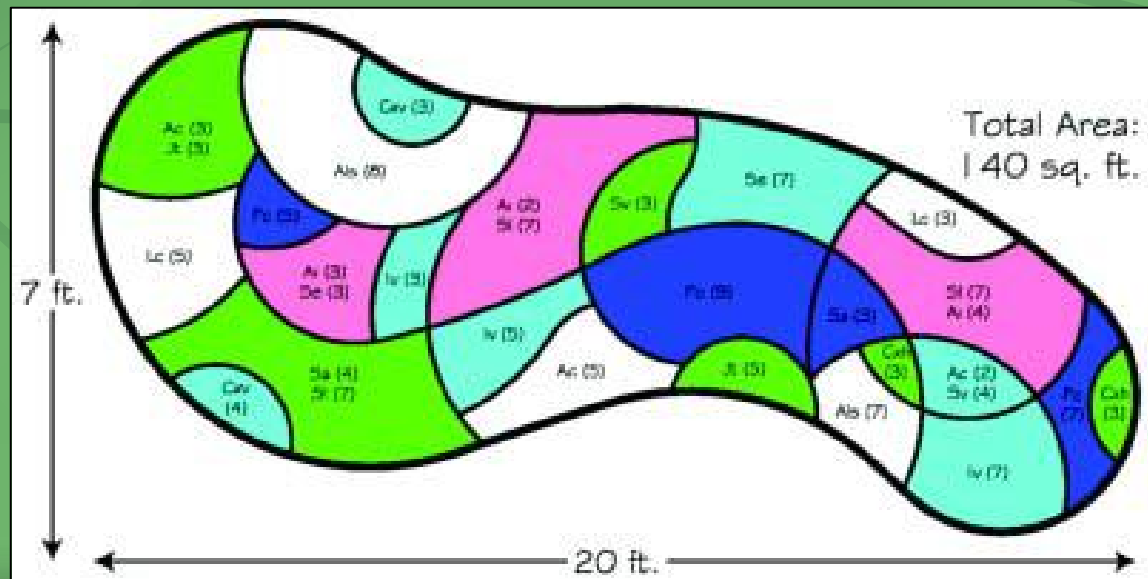
- ❖ Fill the garden with the proper soil mix.

85% – 88% sand

8% - 12% fine topsoil

3% - 5% leaf compost

- ❖ Plant shrubs 8 to 10 feet apart.
- ❖ Plant perennials 1 foot apart.
- ❖ Arrange in a natural manner.
- ❖ Top with three inches of hardwood mulch.

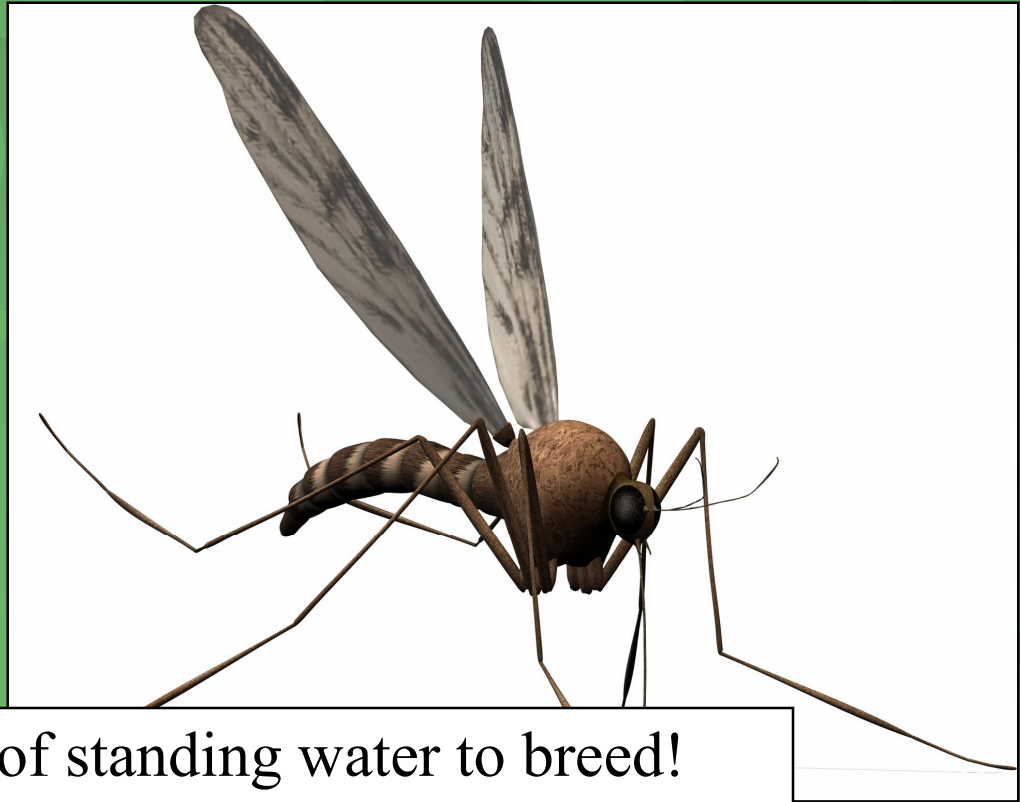


Maintaining Your Rain Garden

- ❖ The plants will need about 1 inch of water per week until they are established.
- ❖ Weeds need to be removed periodically, remove the whole root system.
- ❖ Keep container labels and stakes so you can identify garden plants later.
- ❖ Most natives will be dormant in the winter.

Mosquitoes?

- ❖ Rain Gardens should draw down 6-8 hours after normal storms and within a day after large storms.



Mosquitoes need 4-7 days of standing water to breed!

Acknowledgements

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Acknowledgements



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Ecosystem Services, LLC